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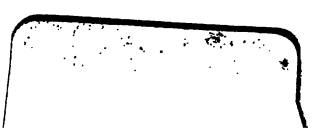
MANUALS OF THE SCIENCE AND ART OF TEACHING.

ADVANCED SERIES.

No. 7

HOW TO TEACH DOMESTIC ECONOMY FIRST BRANCH

NATIONAL SOCIETY'S DEPOSITORY, WESTMINSTER.



Manuals of the Science and Art of Teaching

ADVANCED SERIES—No. VII.

HOW TO TEACH DOMESTIC ECONOMY

FIRST BRANCH

(DRESS, DWELLING, SPENDINGS, SAVINGS)

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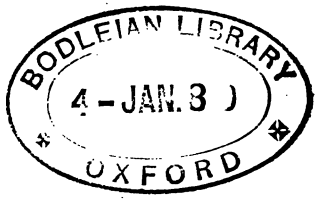

The wide circulation of the National Society's Manuals on the 'Science and Art of Teaching' has induced the Literature Committee to undertake another series of Manuals on more advanced subjects, which they trust will be useful not only to Teachers in Elementary Schools and Students in Training, for whom they are primarily intended, but also to Teachers in Secondary and Higher Grade Schools.

The Manuals of the present series—like those which have preceded it—have been written by men of distinguished reputation in their various subjects, and who have had large experience as teachers and examiners. They include all the subjects in Schedule 4 of the Education Code with the exception of Mathematics, which is fully treated in the 'Pupil Teachers' Course of Mathematics,' published by the Society. The Manual on Teaching Languages has been planned to comprehend the teaching of German and French as well as Latin. In addition to the subjects under Schedule 4, the present series includes a Manual on the Training of Pupil Teachers, by a very successful Lecturer on Method in one of the larger Training Colleges.

In order to obtain greater clearness and precision, each subject has been treated independently, and is complete in itself.

DOMESTIC ECONOMY.

FIRST BRANCH.

CHAPTER I.

THE SUBJECT GENERALLY.

Object of Manual.—My purpose in the following pages is to offer you some hints which may prove useful in teaching classes that particular specific subject, Domestic Economy, which, as it is the most comprehensive, is also the most important, of those appointed by the Committee of Council for additional instruction in schools. (Vide New Code, Schedule 4.)

Importance of subject.—I claim for this special branch of teaching the very first rank in importance on common-sense grounds. History, Geography, French, German, Latin, are all admirable things in their way; to many children they will prove of actual value in after life, and to all they are of a certain immediate value, as tending generally to open the intellect, to store the memory, to add to the stock of knowledge. But no one of these studies, however specially useful to individuals, or generally useful to classes, can be called *essential* to our national education. This must be asserted, however, of domestic economy, and

perhaps a short reflection on what domestic economy means may help to show us why.

Meaning of domestic economy.—Economy, in its literal sense, means 'the rule of the house:' in one word, *housekeeping*. This meaning has been much perverted, so that many people think *economy* means *niggardliness*, which it does not to anyone who uses words with regard to their real meaning, as we all should do. But as this wrong meaning has become only too common, we have got into the way of distinguishing the true sense of economy by putting another word before it; and so we use the terms Domestic Economy, which really mean 'home housekeeping,' as describing the study which we here take in hand.

Its utility to all persons.—Now, we shall see the universal need of 'Domestic Economy' as compared with other studies. Many can get through life somehow without knowing French, German, Latin, Algebra, or Physical Geography, but not one child will be in your classes that does not live in a house, and is not concerned somehow or other in the condition of a home.

Why useful to all.—So much for the universality of the subject; it touches every individual personally. On the importance of the subject I have little to say; it is self-evident that as everybody, even in childhood, has a home, and as everybody, even from childhood, looks forward, however vaguely, to having to keep a house of his or her own, the being able to keep it in the best way with the least trouble, to live in the greatest comfort with the fewest drawbacks, is of vast personal importance to every unit in our schools and in our nation.

Its utility at all times.—Further, as regards the *continual value* of a knowledge of this science of easy living,

we must remember that the use of other branches of knowledge, even to people whose livelihood may more or less depend upon them, is only occasional, while the knowledge of domestic economy comes into use every day and hour throughout the whole lifetime of every man, and every woman, and every child.

Why hitherto insufficiently studied.—Why then, it may occur to you to ask, has this most important specific subject been so little taught hitherto in our schools, as compared with other subjects excellent in their way, no doubt, but far less necessary than this important science and art (for it is both together) of making the house that shelters us, and the home we love, as comfortable, as healthy, and as happy as can be?

Those of my readers who are already in charge of schools can probably answer the question. Domestic economy, until this year (1879), has been admitted as a specific subject for only one portion of our school children to study, namely, for girls; and the taking it up by them as a subject of examination would have entailed upon teachers the taking up by boys of a different subject—that is, would have caused, at all events in mixed schools, the labour of giving regular lessons throughout the year in at least one special subject more than was required.

This year, however, the limitation 'for girls' has been removed from the domestic economy branch of specifics, and the subject has been divided into two classes, one embracing housekeeping generally, the other food and its preparation, proficiency in which latter is still wisely made compulsory on girls, on whom, in adult life at least, the cookery of the future, and thereby in a very large measure the health and comfort of the family, must depend.

Thus we may now teach domestic economy, in its first branch, to boys—a common-sense permission, since, though in general the woman keeps the house, and prepares the food,

the man is expected to provide the house she keeps and the food she cooks, and will not be the less willing to do his own share and to value hers from knowing how both parties can best *economise*, or make the most of, time, toil, earnings, means, leisure, and good intentions, while undergoing the least avoidable amount of discomfort, privation, sickness, and anxiety of mind.

Food preparation not necessarily only a girls' subject.—Nor, let me remind you, is there any reason against letting boys learn whatever cookery maxims are taught to the girls who take up domestic economy as a subject. Some theoretical and practical knowledge of this sort may at times be of very great advantage to both boys and men. Soldiers and sailors, who have had to do without the aid of womankind during a large portion of their lives, are often very skilful and practical in preparing food ; and though most cooks are women, the most skilful and famous preparers of food have always been men.

A few general remarks.—Before entering on the various divisions of this subject which the arrangement of the Education Code suggests, I may be permitted to offer a few general remarks on teaching, which some teachers, or at least some pupil teachers, have not yet found occasion to place among their *maxims*, or chief points, in endeavouring to give instruction.

Clearness of teaching.—Let the teaching be clear. I do not mean merely that you are to avoid long words : words may be very short and yet fail to be understood ; on the other hand, they may be very long and yet be fully understood. Brevity is excellent and admirable, but only when it is clear.

The first little Scripture class I ever examined were reading this sentence, 'The ark swam on the face of the

waters.' I asked, 'Well, what was the ark?' One little hand was eagerly thrust out; no other child seemed to have a notion to express. 'Well, little man,' I said, 'I see you know it. Tell us, what was the ark?' 'A fish!' was the reply. The teacher had made the mistake of 'taking for granted' that the children knew what an ark was. Thus, though 'ark' be a very short word, it is a hard one till children be told what it means. Take a long word, on the other hand, and ask the youngest child in a school where there is a Penny Bank, 'What is a bank depositor?' and you will get an answer; the long word 'depositor' will be no puzzle to him, for he understands exactly what it means.

No knowledge to be taken for granted.—Whatever words you find it best to use, make this one of your teaching maxims, 'I will take no knowledge for granted.' It will really prove in the end a vast saving of time and labour, as well as of many a little disappointment, if you keep in mind the great need children have of explanation, to give them even a faint notion of the meaning of the words you use. It will well repay your patience in the end if you resolve never to pass from one term in your teaching to a second until you have made sure that the dullest child in the class has some clear notion of the first.

And this must be done by questioning, not the bright children who know, but the slow children who do not know, and the shy children who are not certain whether or not they have understood you. You know well enough already that, at least in class, they will never ask you to explain your teaching; so for their sakes, as well as your own, it will be always well to measure, and, if necessary, supplement the comprehension of your meaning which they gain as your instructions proceed.

Importance of illustration.—It will be well to remember that no time is really lost in giving illustrations of

your teaching to the classes. You may be quite sure that though there may be two or three children in each class whose minds are quick to grasp your meaning, any illustrations by which you can simplify it to the slower ones will tend also to fix it in the brighter minds. For instance, you tell your class as a fact (apart from its cause) that heated air rises; this is a statement that they may or may not remember, but if you light a match or candle, and show that a piece of paper held above the flame will take fire, and held beside the flame will remain unaltered, they will have a proof of the ascent of heated air which will never leave their minds. Of course, I offer this merely as a typical instance of the simplest illustration.

No time really lost in illustration.—Some may suppose that the time spent in looking for a lucifer and a bit of paper, and in giving the demonstration, will cause an unnecessary and undesirable interruption to the work of the class. This is a mistake; the loss by interruption will be balanced by the gain in interest taken, and the dullest child in the section will have not merely listened to the statement of a fact, but have gained an appreciation of it, and laid, so to speak, a brick in the foundation of its knowledge.

Nor need there be any delay in hunting for materials. It will be a piece of practical school economy of time and order, if the teacher, intending to give his lesson, have at hand, as he should, the few little materials which will be needed for making his teaching plain.

CHAPTER II.

DIVISION I.—CLOTHING AND WASHING.

Previous knowledge of the subject assumed.—We come now to consider the first year's domestic economy, which embraces clothing and washing. Of course you will understand that this little manual, though endeavouring to give hints on the different branches of the subject which may be useful in suggesting ways of teaching, does not pretend to take the place of any one of the many useful books of domestic economy which have already appeared. Probably, before taking this little work in hand, you will be already familiar with one or more of these, at least in their general outlines, and will not really need to be instructed again in that alphabet of the subject which so many useful works contain. One thing I may say,—that you cannot read too many of them. The subject, for instance, of clothing has so many sides that you will be certain to find much in every little book on domestic economy contained in none of its fellows. I will therefore assume your knowledge, and offer you some hints on the best way of imparting it.

We will suppose you, then, by the course of class teaching you have already passed through as a scholar, and by the additional reading of a number of useful manuals which you have studied, to be yourself familiar with the principles of the subject, so far as 'clothing' is concerned. We will next suppose you preparing to instruct a class, let us say of the Fourth Standard, in that branch of study. How will you

teach them? There are several ways. Perhaps, if I put these different ways before you, your own judgment will enable you to select the best.

Mechanical teaching.—Remember you have a year's time to teach this division of your subject; and, keeping this very important point in view, you turn to your manuals and find, on an average, less than a dozen not very closely printed pages assigned in any of them to the facts to be taught as to clothing and washing. You might give your class half a page a week to learn by rote, and they would have the whole bookwork of the subject at their fingers' ends in half a year. They might possibly, by inspection-time, have repeated it all twice or thrice, be able to give the inspector chapter and verse in answer to his questions, and succeed in obtaining the Government grant. But you have not the true teacher's heart and spirit if such a system as this satisfy you. Children might have the whole book by rote, and know nothing of the subject. The child who, asked by an Inspector what conscience was, said 'An inward monitor,' and, asked further what a monitor was, said 'An ironclad,' gave correct answers, indeed, to the two questions; but his teacher, on hearing them, must have felt ashamed of himself. A mere rote repetition is not what any teacher should aim at. Let definitions, if you will, be learned by rote; they will discipline memory, and simplify expression, but they must be understood, not merely gabbled.

Desultory teaching.—I will now offer another method to your judgment. A teacher asks his class why people wear clothing. They will all say, to keep themselves warm. He presses them further, and some of the quicker ones will soon see and say that clothing may be worn to keep people cool as well as to keep them warm. The next question he asks is why the same sort of thing should be used for such

different purposes. He feels he cannot well explain this without showing that the temperature of the air is variable, while the temperature of the blood in a healthy human being is constant. To do this, he thinks of the thermometer. He shows it to his class; he thinks of its name, *heat-measure*; he explains this; the necessity, in order to produce a scale at all, of knowing some fixed point strikes his mind; he tells them that freezing point may be known by the congelation of water, boiling point by the evolution of steam, and so he comes to blood-heat, which may be taken as a conventional constant.

But he wants to illustrate this: he feels that the children, if as awake to the subject as he wishes them to be, will want to understand how the indications of these fixed points in the thermometer can be made, and so forth. He has the illustration at hand; lest he should forget it, he goes on to show the mercury or spirit rising in consequence of his placing his hand on the bulb; he cannot resist showing them, in this connection, that this change is not produced by contact with other articles in the room, which are at the temperature of the atmosphere. But why, he thinks the children will wish to know, why does the mercury rise? In explanation, he tells them of the expansion produced by heat; this leads him to describe radiation and conduction of heat, and a dozen obvious and interesting illustrations occur to his mind—the wooden handle to an iron tool, the kettleholder for protecting the hands, the refrigerator for retaining heat or cold, and so forth. By the time he has got thus far, keeping up no doubt the interest of the children, and inviting additional illustrations of his statements from them, the hour strikes, and the lesson is over. This is an infinitely better sort of lesson than the first. There has been no dry mechanical drudgery in it. The children have been told a number of new things, their attention has been kept awake, their conduct has been good, and they have been won into actual thinking, as well as

reasoning ; and though much of the lesson will be forgotten, still something will have been done towards giving them an increase of actual knowledge. And yet this may be a very faulty sort of lesson. My keener and more experienced readers will recognise why without my telling them ; though most people, standing behind a pupil teacher while giving such a lesson, might feel with pleasure that he or she was really full of the subject, and zealously anxious to communicate the required knowledge.

Its faultiness.—The rote lesson was bad, as employing only the memory without the intellect ; as being mechanical, but not instructive ; as conveying teaching, but not learning. The second lesson errs the other way. It puts forward vastly too large a meal for the mental digestion. As the first lesson may be starvation, so the second may be surfeit, and its deluge of new ideas may utterly confuse some of the scholars' brains.

And whence will this confusion have arisen ? If we look for the reason on the surface, we shall find that the teacher, in giving his lesson, has become desultory—that is, has been bounding from point to point, from illustration to illustration, a great deal too hastily. This is no proof, you will admit, that he is master of his subject ; quite the other way, it proves that his subject is master of him. He has been unwilling, as he fancies, to leave anything out from his exposition, and as each salient point of the subject has entered into his mind, he has seized on it, and made it prominent, that very moment, *lest he should overlook it afterwards.* He has been going up, like a head-heavy kite, with a dash and jerk, now to one side, now to the other, and though he has risen to some height his position is unsteady and precarious ; having gone up in a series of flashes, he may, so far as the benefit of his lesson goes, come down in a succession of flounders at the last. What does the head-heavy kite want ? Just what the teacher wants—steadying.

His method wants the ballast of system; his thought must be tempered by forethought, and his zeal be directed by preparation.

The systematic lesson.—With this caution before you I would suggest your making the experiment of proper preparation for a lesson or lessons on the same subjects as I have set before you in the picture of an hour's desultory teaching. You will see at once that the main fault of the exuberant lesson was that, not beginning at the beginning, the instructor had to work backwards instead of forwards. The task being to teach children why clothing was wanted, both for warmth and protection from warmth, it is obvious that the first essential foundation on which to base such teaching should be a knowledge of the leading principles of heat and cold. From these would come out, not by the chance suggestion to the teacher's mind of some passing illustration, but by a clear and definite logical process, the necessary and simple evolution of such points, for instance, as I have hinted at in the desultory lesson.

Its proper course.—Starting thus from first principles of the nature of heat and cold, the teaching will follow a clear and simple course; in regular order, as it proceeds, like the successive affluents which make the brook into a river, the knowledge of expansion and contraction, of radiation and conduction, of the thermometer and its indications, of the variable temperature of the atmosphere and the fixed temperature of the blood, and finally the simple reason (which we have adduced as illustrative) of clothing being required for two apparently quite contrary purposes, will all be taught in proper course: if apparently more slowly, yet unquestionably more soundly, with better purpose and with greater profit, than by the desultory method.

Economy of systematic lesson.—I must not linger longer over this warning as to the superiority of systematic over spasmodic teaching. For a teacher to prepare carefully the lesson he means to give, to have his illustrations thought out beforehand—written down, if he will, on a note-slip, to aid his memory—to be ready to exercise a stern self-denial, by resisting all temptation, as the lesson proceeds, to reach forward to some more advanced portion of the subject, for the reception of which he has not yet prepared the minds of the less intelligent of his class—in a word, for the teacher to *plan his lesson and adhere to his plan* is, in the end, a real economy instead of waste of time and trouble and teaching power. And it has another vast, but little considered advantage. It trains the children into systematic habits of thought and attention; it makes them, through such discipline, vastly more susceptible than they would otherwise become of clear, definite, systematic instruction; and as they grow older, and have deeper things still put before them, the greater receptivity of their minds, and the habitual logic of their thoughts, will have made the task of imparting higher teaching infinitely easier and more interesting to their instructor. This will repay him a hundredfold the conscientious trouble he has taken, by the mastery his clear teaching will have given him over his pupils' minds, besides multiplying their mental power and his pleasure in its development.

Objects of clothing.—You will show these to be threefold—(1) for keeping heat in; (2) for keeping it out; (3) for ornament.

Ask the children which is the most important purpose. In our climate they can scarcely fail to give the first place to the first, and the last to the third. Proceed then with instruction on the clothing which retains heat. Having shown them that the body requires to be kept at a very equable temperature, give them practical illustrations of the different powers

of different materials to retain heat. This, of course, must exemplify the conduction of heat; but I think you will save their minds from confusion by avoiding the use of two very common terms—a *good* conductor and a *bad* conductor. Remember that your young pupils will be very apt to suppose from such terms that good conductors are good *things*, and bad conductors bad *things*. You will find it better to speak of *fast* or *slow* conductors instead.

Illustrations of conduction.—It will interest them to show differences in conducting power by such an experiment as the following. Have a number of little cuttings (an inch or two square will be abundantly large) of flannel, cotton, and linen; wet them all thoroughly, squeeze out the water, and let each child place a wet piece of each on three different fingers. Then let them each blow from a distance of about six inches upon the wet rags, and ascertain which fingers feel the cold current most. When you ask them they will all give the following order of experience—linen, cotton, flannel; and this is an illustration they will never forget. (You can use it further very effectively when you come to teach them of evaporation, and the reasons and risks of catching cold.)

You can go on to teach them general facts about the clothing that keeps heat out, so far as this is identical with the former. They will be interested to know that the same material which keeps warm bodies warm will keep cold bodies cold. You can exemplify this by telling them that when it is desired to keep a lump of ice as long as possible from melting in summer, it should be (and generally is) wrapped round in several folds of blanket; and that the so-called 'Norwegian kitchen'—a felt-lined box which will keep a man's dinner hot for a number of hours—can be also used as a refrigerator to prevent the melting of a block of ice. If it be winter, and ice be at hand, let two equal pieces be brought, and let one of them be wrapped in woollen, while

the other is freely exposed to the atmosphere of the school-room for half an hour. If the weather be too warm for ice to be found, two hot potatoes may be treated in the same way, and fully illustrate the point taught of the retention of heat and cold.

Texture of clothing.—Having got so far in showing how differently linen, cotton, and woollen conduct heat or cold, and why they are therefore, from their effects on the body, *called* cold or hot, though their temperature be identical, you may make your scholars clear on the subject of *texture*. Starting from the meaning of the word, which implies *weaving* of some sort, you should give them some sort of notion of the manner in which this is done. Hand to one a piece of linen, to another a piece of cotton, to a third a piece of cloth, in each case with selvedge on one side, and let them pull out a thread each way, or show them how to do it. They will see that, however different or combined the materials be, one principle is applied in the texture of all, namely, the alternation of threads forming respectively the woof and the warp. Incidentally you may show them that, by ravelling any piece of stuff, they may find out for themselves whether the fabric be, we will say, all silk or half silk and half thread, all wool or half wool and half cotton, and so forth. Having shown these general principles of texture, you may point out exceptional textures, such, for instance, as appears in a knitted sock or garter, a chip hat or a piece of straw plait, all of which are textures, that is, are woven, though by methods differing from that of the weaving loom.

Clothing without texture.—Though most of our clothing is made by texture or weaving of one or another kind, there is still some of different character. Set your class thinking of instances of this. If they do not guess them at once, make them think how man was first clothed, and they will at once recollect that skins were used for this purpose long before weaving could have been thought of.

From this starting point they will find out and name most articles of clothing made of fur and leather. In connection with the first of these you may (if the district be rural) give them some valuable hints as to the use that is so seldom, and might be so often, made of rabbit skins to make winter cloaks for little children. Passing from fur, you should give them some instruction as to the preparation and use of leather, chiefly for clothing the feet and hands, &c.

Other substances not textile.—These are to be found in materials of clothing manufactured out of pulp instead of from spun threads of various kinds. Typical illustrations of these are easily found in paper of any sort, and in the felt of which hats are made. A piece of blotting paper pulled asunder will give the children an idea of the difference between such substances and any woven material. And here you may take occasion to show how large a means of retaining heat is wasted by neglecting the use, in many instances, of a material so cheap as paper, at least as lining to clothes, and as a supplement to bed coverings.

Waterproof clothing.—Another class of materials for clothing, though of occasional service, can yet prove extremely injurious to persons employing it unwisely. I mean waterproof clothing, the great cheapness of which affords too strong a temptation to its misuse. Except in the case of overshoes actually moulded out of caoutchouc or india-rubber (and which are now very seldom seen), nearly all waterproof clothing consists of a layer of impervious material spread over a texture which varies from the fineness of silk to the coarseness of a canvas tarpaulin. To keep the feet from wet in going a short distance, or to protect the clothes from injury during a passing shower, these things are very useful; but as they prevent the passing out as much as the passing in of moisture, and the body is continually sending forth moisture through the skin which

the waterproof keeps from passing into the atmosphere, a person wearing a waterproof suit for an hour to keep his clothes dry from rain, will, on taking it off, find they have become wet from perspiration.

Of course the objections to the use of these substances apply in kind, but by no means in degree, to the use of skins. All textures, by the necessary interspace of air, however small, between the alternate threads of which they are composed, are more or less *pervious*; and skins also, being full of pores or little passages, permit a certain though less easy passage in or out of air; while macintosh or waterproof, being entirely impervious, destroys this quality in the texture on which it is spread, and retains the moisture of the body.

Form of clothing.—Under this head I will touch merely the subject of suitability of garments in shape to their purpose, not the passing mode in which they may be worn, commonly expressed by the word *fashion*, which strictly means the manner in which clothes are made, though we generally apply it to the fancy which dictates the shape.

Teach your pupils, in the first place, what principle the form of clothes should follow, as a means to an end. They will admit, if questioned, that a leather boot or shoe cannot be essential for the creation or retention of warmth, since this can be effected by cloth, cotton, linen, or other coverings. They will then see that protection is what specially necessitates such covering for the feet. Show next the folly of making what should be a protection into an injury, as is so often done by the bad form of shoes. Apply this by asking every child whose foot has ever been pinched by a tight shoe to hold up a hand. You will be pretty sure to find many sympathisers with this view of the subject. Ask them in what respect the form of the pinching shoe *was bad;* one will say 'it was too short,' another 'it was *too narrow,*' according to each one's experience. On this

you may base an illustration. Ask whether one of the well-shod ones will take off his boot or shoe, that something may be shown. But do not call on anyone at random to do so; he may prove to have either no sock, or a very questionable one, on, and be unwilling to submit to an exposure. None will volunteer who is not easy in his mind on the subject of socks. Tell him to put his boot or shoe flat down on a sheet of paper and to draw a line round it. Next, let him place another sheet on one of the benches, put his foot lightly upon it, and then draw its outline. The children will thus be shown the vast difference in outline which exists between the natural shape of the foot and the conventional shape of the shoe. But there will be more to show. Let him next stand on his one unshod foot upon a sheet of paper placed upon the floor, and let another child draw upon the sheet the outline of his foot. Let these two outlines be exactly cut out with scissors, and it will be found that the second one is always a great deal larger than the first. This will teach the children that a shoe made to fit the lifted foot exactly may be much too small for the same foot when bearing the weight of the body, and give them a notion of the cause of so many misfits.

Next make them think of another reason for shoes pinching young feet. They will soon tell you that this is caused by the feet growing against the shoes. From this you may teach them that their new shoes ought always to be too large at first, though exactly fitting ones may look nicer when first tried on.

You may, if you please, illustrate the subject further by telling them of the Chinese custom of deforming the ladies' feet, and show them the folly, as tending to deform and hurt the foot and waste the muscles of the leg, of tight narrow shoes, and above all, of the high heels placed not under the heel, but under the arch of the foot, which spoils the comfort, ease, and grace of so many women's gait at the present time.

If it be winter, let them show, by holding up hands, how very many more children have chilblains on the feet than on the fingers; and let them learn that these, all arising from bad circulation of blood, would probably not occur to any children on the feet only, but for their feet growing against the shoes. Those whose circulation is naturally sluggish will have chilblains both on fingers and feet; those whose circulation is impeded by tight shoes will have chilblains on the feet, but not on the fingers where the circulation is natural and unimpeded.

I have taken the instance of foot clothing at some length, in order to afford a sample of how lessons on this subject may be given. There are many other articles of dress which may be similarly treated, and which afford abundant means of supplying children with common-sense views on the form of clothing. Thus the evils of tight lacing, and of leaving arms, necks, and legs of children exposed to cold, and the like, may be very practically taught.

Clothing as an ornament.—This will require some treatment from you after you have fairly exhausted the subject of clothing in its primary aspect, as used to retain or exclude heat. And here a certain amount of caution is necessary, lest you give children some indistinct ideas as to the right or wrong of regard to appearances in dress. To say that care for appearances is wrong would lead some to think there was a merit in wearing rags; to say that people should dress according to their means would lead others to think it right to wear any amount of finery which can be paid for. Between these two general statements there is room for inculcating a great number of sound and useful ideas on the subject of ornamental clothing. There is no reason, for instance, why, when a woman gets a new dress, she should have it made in the very shape that was common twenty years ago, because in such a form it would look strange beside other people's dresses of more modern shape; nor is

there any harm in her having it made in a form which she thinks will become her, rather than in any other; but still her dress should be suitable to her station, to her surroundings, and to her habits.

Quality of clothing.—By all means prevent the children confounding *good* clothes with *fine* clothes. And do this by questions, which will lead them to understand that one's week-day working clothes, though they cost little, may be good, while what they are apt to call *best* clothes may be flimsy, wasteful, and bad. Make them see a possible difference between 'Sunday clothes' and 'good clothes.'

Of course there are a multitude of other points in connection with clothing, to which, if space permitted, I might draw your attention. Think them out for yourself, and bring them into the lessons you prepare for your classes. It will be both interesting to yourself and advantageous to them.

Washing.—With regard to this subject, much cannot be done in a school class, beyond putting forward general principles. As far as the theories of dirt and its danger, and of cleanliness, its healthfulness, necessity, and comfort, are concerned, the matter is nearly obvious. Something practical may be done, besides giving the hints as to materials and methods contained in the text-books of 'Domestic Economy,' by encouraging the children to compete with one another in the actual art of washing, each competitor attempting the getting up at home of one article of the same sort. Even boys might be induced to try this, first in competition with each other, and afterwards with the girls. Soldiers, sailors, and Chinamen are noted for success in laundry work. Very few mothers would object to letting their little ones make a few trials over the weekly or fortnightly washtub, as the practical knowledge thus gained might prove of real and early home value; and indeed

parents generally approve schools whose teachers try to impart at least the desire of doing something visibly and unmistakably useful.

Of course care should be taken that the efforts made by the children be honestly unaided at home; and the decision as to merit should be left to the votes of the little competitors themselves.

CHAPTER III.

DIVISION II.—THE DWELLING.

The dwelling.—The first stage of our subject has been that of clothing and washing, the preparation and proper care of the garments we put on. To be scrupulously exact, we may say that, if *economy* mean *housekeeping*, the mere covering of the body does not necessarily belong to it. But this second stage beyond all question does, for the keeping of a house of course implies there being a house to keep.

Importance of subject.—The importance we should attach to useful knowledge on this subject depends upon our estimate of the value of life itself. A vast proportion of our fellow-creatures, even in England, have their lives as surely shortened by the badness of their dwellings as they would be by their taking a regular dose of slow poison every morning of their existence. Set to work, therefore, to teach this part of domestic economy to your class with most zealous care, as knowing that in doing so you are really, with every lesson you impress upon your hearer's brain and memory, conferring a tangible advantage and blessing to them all.

Supposed uselessness of teaching the subject.—It may be said that our labouring classes need hardly learn how houses are, and how they should be, built, because not

one in a hundred of them will ever be able to build a house for himself; that he will have to take all through his life just whatever dwelling, good or bad, may offer near enough to his work; and, if its condition be bad and unhealthy, he will have no choice but to simply take his chance of sickness, weakness, and death; that it will never be in the power of the poor man to reform dwellings which he rents from persons who have no necessary interest in his health and well-being, and who look only for the rent he promises to pay, not to his easiest means of earning it. There can be no greater mistake than this. If all our school children be taught while children to know the difference between a bad and a good dwelling, and how much really cheaper it is to pay even a high rent for a good than a low rent for a bad one, the builders and owners of houses will be compelled for their own sakes to erect good houses which tenants will take, instead of bad ones which will stand empty. Even now, as a rule (of course I speak of heads of families, not of children), the worst characters are generally found to occupy the worst dwellings; the steadier and thriftier members of the community refusing to work in neighbourhoods where they cannot live under healthy conditions.

This answers the assertion that the working classes cannot reform their dwellings. They can and will do so, for it really lies in their own hands, if they be properly taught, as you and others must try to teach them.

Hopefulness of subject.—But there is no need to assume, as we did just now, that hardly any child you teach will ever need to build a house for himself. I think you will gain much more attention to this subject from your class by teaching them to believe it possible for everyone of them, if thoughtful and prudent, to build a house for himself when he grows up. They will be thus much more *interested* in learning how it should be done, for you will *probably remember* that in your own childish days there was

no game which gave you greater pleasure than playing with your companions at house-building of one sort or another.

As to the means for doing this, I shall have a few words to say when treating of the third stage of domestic economy; you will have enough to do during this second one if you fill your pupils' minds with sound knowledge as to the nature and condition of a healthy dwelling.

And this, you will remember, may be of great immediate practical advantage to them long before they may dream of saving money to build homes for themselves, since instruction in the conditions requisite to make a new house healthy will suggest at the same time many directions in which old and unhealthy houses may be rendered safer and better by the expenditure of a little thought, trouble, and money.

Analogy between clothing and shelter.—Make your class understand that a house is required for much the same reason that clothes are required, namely, to keep up the proper natural temperature of the body, and then much of what you have been teaching them as to clothing will prove useful as you teach them about dwellings. Let them show you reasons why shelter is essential to man in addition to clothing; these reasons lie, of course, in the heat of the sun, its excessive brightness, in the difference of day and night temperature, in the exposure to rain, and the cold of frost. If a temperature suited to human life remained always the same day or night, unaltered by sunshine, cold, or moisture, men would only need houses for the purpose of keeping their property safe. The same sort of objects, therefore, should be sought for in a suitable house as in suitable clothing. For this reason you will show why, for the outer structure of houses, at least in our climate, slow conducting materials are better than fast ones. Thus the children will understand at once that thick walls and roofs are better than thin ones, for keeping heat and cold in or out, even though both be alike

in the immediate protection they give from wet. Let them try for themselves the experiment of taking up a heated kettle with a straw kettle-holder, or a piece of tin or even of slate, and they will remember always that a straw thatch will make a warmer winter and a cooler summer roof than slate or sheet iron. Offer to lend a thermometer to any of them who would like to test this truth by noting the temperature in bedrooms or garrets immediately under roofs of different sorts. This will interest as well as teach them; and if any making the experiment should come back reporting it to have failed, it will give you an opportunity of teaching them a great deal more, by questioning as to secondary conditions affecting the experiment which they had failed to take into account. For instance, you would ask whether there had been in winter a fire in the slate-covered and none in the thatched room; or if in summer they reported a higher degree of heat in a thatched room than a slated one at the same hour of the day, you would ask whether the sun had been shining equally on them both, or whether its heat had not been intercepted or shaded from the thin roof by a tree, &c.

Further outer structure of dwelling.—You can then go on to show the advantages (not at the same time omitting the possible disadvantages) of double walls enclosing air spaces, of double doors, and even of double windows, which in some colder climates than ours are considered nearly indispensable.

Let the children next instance to you the various materials of which houses are built, as, for instance, brick, stone, wood, iron, mud, concrete. Teach them the relative advantages of these, modified as they must be, of course, by considerations of supply, carriage, prime cost, durability, salubrity, expenditure of labour, comfort, and even appearance, which is certainly a factor not to be omitted in calculation. Make them understand that none of these

can be absolutely best in every place, materials which are abundant in one locality being entirely unobtainable in others.

Disadvantages of an unhealthy dwelling.—Of whatever material a dwelling may be built, there are certain conditions to be observed in its position and erection, the neglect of any one of which must render the dwelling unhealthy. Show your class why it is foolish for a man to live in an unhealthy house because the rent is low. Let them calculate, if sickness caused by the unhealthiness of the dwelling arise, how great a cost may have to be incurred in a year for doctor's attendance, for medicine, for wages unearned during sickness, for loss of time by others while attending to the sick, even apart from possible funeral expense, the shortening of many lives, and the anxiety, sorrow, and trouble which can never be calculated at all. Let them see how terribly larger such expenditure is sure to be than the small sum every year, or even week, necessary to provide a healthy rather than an unhealthy dwelling. This will make them ready to think and to be shown how to distinguish a house that must be unhealthy from another.

Essentials of a healthy dwelling.—Of course they will readily understand that a house which provides a cause for sickness must be unhealthy. Let them think or be shown how we are affected by disease; then they will see that (1) if cold and damp cause disease to lungs, and rheumatism, a dwelling hard to warm and not weather-tight, so far as keeping out wet, must be a bad one; (2) that if spoiled or infected air causes and spreads disease, a house from which it is hard to drive away bad air and replace it with good, that is, a house not well ventilated, is a bad one; that if decaying and putrid matter breed disease, a house without good drainage for carrying away such infectious and poisonous matters must be a bad one; that if

light be one of the necessaries of health, a dark gloomy dwelling must be a bad one, injuring both the body and mind. Thus you will have got your class to accept as a maxim that a damp, ill-ventilated, ill-drained, gloomy dwelling must be a bad one, and dear if it could be had rent free, as well as deadly at last, even though men might live in it for years.

Alleged disadvantage of such teaching.—It may be said that to teach young people, many of whom live in unhealthy dwellings, such matters as these tends to make them discontented with their homes. It will not be so. Firstly, it will tend, in time, to make the homes better, even as a market speculation. If working people be taught in school to know the advantage of a healthy dwelling, unhealthy ones will not be rented on any terms; and further, the pointing out of deficiencies in the dwellings they live in may set the school children, and through them their parents too, to remedy, as may to a great extent be done, faults or disadvantages in the dwellings they now occupy. Let us touch, then, briefly on the line of teaching to follow in regard of the more important conditions necessary to make a house healthy.

Protection from damp.—Find out from your pupils their notion as to the coldest and dampest aspect of a house. If they cannot tell, and have never thought, tell them to try, by next lesson, to give a better answer. Let them, for instance, go round the church and look what parts of it are most damp. There will probably be a vane on the tower or spire, so that they will not mistake the cardinal points; they will most probably all agree in calling the north side the worst. They will judge it by the apparent moisture of slates, or moss between tiles, &c. Ask them why should this be, if the south and west be the quarters from which our rain for the most part is brought? Lead them gradually

up to notice that the sun, which evaporates damp, shines on the east in the morning, the south at mid-day, the west at evening, but not on the north, and they will have learned a notion of the importance of *aspect*.

And this is a far more weighty matter for the young who live in towns, and sometimes in single rooms there, than for those dwelling in the country; since most cottages, as standing separate, look every way, while town houses as a rule can only face two points, and are often so divided that the dwellers in them can never face more than one. To dwellers in such houses, aspect, both for the evaporation of damp and for the supply of light, is of vast importance.

Danger of damp walls. — Great discomfort and danger arise from walls which constantly absorb moisture, and consequently are always producing a cold evaporation. Teach the children the vast importance of a 'damp course,' of slate or other impervious material, let in near the foundation of a building, to check the ascent of moisture from the ground. Of course this will not help houses already built without such precaution; but it will teach your pupils, when their time comes for choosing a dwelling, to know what to ask for, and so, by making demand, do their share towards producing the supply. Suggest to them to think of ways to make damp walls less damp. This may be done, when caused by ascent of wet from the ground, by the small trouble of making a little drain of broken stones along the wet wall outside, and drawing down the moisture into a little cesspool instead of leaving it to be absorbed into the walls. If the damp wall be caused by soaking of rain (commonly on the south-west or rainy side of the house), weather slating can be made of great service.

Sanitary self-help.—Show your pupils that though these be, as well as the mending of a rotten door-jamb or a broken window-frame, landlord's repairs, yet, if the landlord

will not attend to them, and the tenant can find no other dwelling, it is really cheaper, as a matter of health, happiness, and unimpaired earning power, for the tenant to execute such repairs either by his own hands or at his own expense.

Drainage of dwelling.—Your class teaching on this point, again, though based on the same first principles, must take different directions, according as it is addressed to dwellers in town or country. It may seem a strange thing to say, but in all reason the most sensible foundation on which you can begin the teaching of this subject is the question to the children, 'Why has a human being a nose?' From this you can easily lead them to see and remember that, at all events under our present social conditions, the sense of smelling is given us not nearly so much as a source of pleasure and enjoyment, as a means of protection and warning. Of course there are differences of personal tastes; people differ as to beauty of persons or places, they differ as to calling certain sounds, such as music, &c., delightful or otherwise; but there is certainly a universal consent as to a disagreeable odour being a bad smell, and a bad smell an unwholesome and dangerous thing. Show your pupils something about the generation and expansion of gases, especially of noxious ones; how they must naturally be evolved from decaying and corrupt matter of all kinds, and of how great danger to health, not only as conveying an independent poison to the human system, but also, in countless cases, as conveying direct germs of deadly disease from one human being to another. Argue the question through with them, till you find them come to the conclusion you would lead them to—that, as these gases must naturally be evolved, it is necessary to human health and safety that they should be rendered harmless. They will soon understand, first, the necessity for the removal of putrid matter from immediate human neighbourhood, and, secondly, the necessity for dilution of the noxious gases by exposure to air.

Cottage drainage.—Point out the vast advantage of drainage conditions which country life gives to one who knows the first principles of this most vital subject. In the country, where space is abundant, let them learn that nothing but indolence and ignorance need prevent a cottager's home being safe from the peril and plague of sewer poisoning. Point out the common sense of having no outdoor closet placed on higher ground than the dwelling-house, or within reach of possible percolation into a well; how the shallow cesspool may poison the deep well, which never could cleanse the cesspool, and so forth. Do not be afraid to put the matter plainly before your class. Ask them in what houses a sewage smell is found; question them as to means for its removal, which is almost invariably possible, and often ridiculously easy; and give them some simple hints as to disinfection by admixture of earth, ashes, &c. Stir up the boys to a sense of dread lest they neglect such things, and to a sense of duty in trying to remove and remedy them with their own hands, and you will find the lessons of good effect. You cannot too plainly enforce upon them that any alleged neglect on the part of landlords, inspectors of nuisances, or sanitary boards is no excuse for even the very poorest labourer letting himself and his family be poisoned, hour after hour, by causes which a little trouble would remove in less time than is often spent in grumbling about it.

Town drainage.—With regard to this you will have a harder task to teach than on cottage drainage. Bad sewerage need not exist in country cottages, since in the country sewers are not absolutely necessary, and can be better done without if the occupiers are even moderately cleanly and not immoderately lazy; but an epidemic of sickness may affect thousands in a crowded town district from the generation and escape of poisonous emanations, for which not one of the afflicted residents can be blamed. You must show your class the principles of town drainage, giving them notions of main drainage and

outfall, of house drainage and its connection with mains, of the risks involved from a flooded sewer, a broken pipe, sewage-saturated brickwork, or an imperfect trap. These things you should make them familiar with in a general way, explaining the principle, at least, of traps by models and drawings on the black-board. But no lessons and no explanations on these points can be half so useful as the teaching every member of your class the general duty of doing battle against bad smells in dwellings as against a possible plague or pestilence. The dweller in a single room of a crowded court cannot tear open pipes and burst up drains; but he can, and he should, wherever he detects the evil smell of sewer gas, call in the sanitary inspector with the least possible delay, as the first step towards setting matters right. Therefore set your class as a home lesson to bring you word who is the sanitary inspector of the district they live in, where his office is, what his office hours are, and so forth.

Warming.—The handbooks will give you most of the necessary details on the subject of artificial heating, so far at least as common materials and common methods are concerned; and we have already touched the subject of warming incidentally, as regards the quick or slow conduction of heat to be considered in choosing materials for the structure of a dwelling. But there is probably no point so important as this of keeping up, when needed, our health and strength by means of artificial heat, in which English people of every class suffer so much unnecessary discomfort, and contract so much sickness, from sheer ignorance and prejudice.

Romance of open fire.—In the first place, teach your class the fallacy of the general objection made to the use of a close instead of an open fireplace. Ask them why they or their parents prefer it. They will all say, 'We like to *see* the fire.' Show them, in reply, that they only fancy

this, because with them *seeing* the fire is their only way to feel the fire, and is a proof of the cold they suffer rather than of the enjoyment they have in the mere sight of a blaze. How will you prove this? The way is simple. Show that all through the summer they do not *see the fire* and do not think of it, except for cooking purposes, and that though the grate be cold and black and empty the absence of fire does not depress them, simply because they are warm and comfortable without it. They will thus learn, in theory at least, that if the room be comfortably warm they really do not occupy their minds about the fire. And this will be a step gained towards the introduction of cheap and effective warming, of great importance in the present day when fuel of every sort increases so much in cost. But theory alone, however sound, will not prevail against prejudice, and children, of course, have no means of putting into practice and making proof of the truths they may be taught in school upon this subject. Nor can much be done in the way of uprooting this prejudice until opportunities be given for experimental proof, which poor people cannot afford to make, of the superiority for warming and culinary purposes of a well-constructed stove, made to close or open, with narrow flue, over our present old-fashioned, foolish system of large open fires under wide chimneys, necessitating enormous and constant draughts of cold air into the rooms to secure a rapid and yet imperfect combustion, and at best a fitful and ill-distributed warmth, at a most unnecessary expense, both of cost, cleanliness, and comfort. With regard to warming and heating for culinary purposes, more will be said in the handbook treating of the preparation of food.

Cleaning of the dwelling.—On this point, so far as practice is concerned, we have not much to say, it is so much a matter of practical experiment. But even a teacher in a school may do much towards promoting zeal and effort

in this most important matter by inducing the children under his charge to compete by each undertaking on a Saturday the thorough cleaning of a room at home, and by getting some experienced person to go round the competitors' homes, say at eleven o'clock, in order to decide which child may have done best. The conditions of the contest should not exclude the mother's *advice*, but her active co-operation, of course, should not be allowed.

At one time the competition might be as to the entire cleaning of a bedroom ; at another time (for which a Saturday afternoon instead of morning should be chosen) the cleaning of kitchen and scullery ; at a third, that of stairs, passages, and offices. It is quite wonderful how much pleasure children will take in such efforts, and how, if proper hints are given, parents will welcome and encourage the teacher's desire to promote practical teaching of any kind to be carried out in the home. But even where parents generally might be listless or antagonistic, children, with a little management, might be got to compete, say four each week, in the Saturday scrubbing and cleaning of the school itself ; and might have a good pattern set before them of how cleaning should be done (at least in the country, where the master's house generally adjoins the school), if the schoolmistress know and practise in her dwelling those rules of systematic household cleanliness, which children may be made to learn, but will never carry heartily out without the aid of visible example.

Ventilation.—In a school where animal physiology is not taken up as a special subject, a teacher will hardly be expected to give a class much instruction as to the *rationale* of respiration, which more or less renders necessary both ventilation itself and a knowledge of its principles. But, however little of such teaching be given, the study of the subject may be very much aided by once for all enabling the children to contrast the effects upon their own persons

of the inhalation of spoiled or of fresh air. Of course such a contrast lies close at hand, between the crowded schoolroom and the outer atmosphere, but is often overlooked for the simple reason that the schoolroom, *when the children first enter it*, is generally full of fresh air, which is more or less gradually, and consequently less perceptibly, spoiled by the admixture of carbonic acid gas as the hours go on. If the teacher wish to let the children remark the contrast in the most striking way, he will send out a section of his scholars for five minutes shortly before the end of a school-time, and let them report on their return the difference of atmospheric conditions they are able to notice.

But this may prove after all but a small difference if the school be, as it should, effectively ventilated. The teacher must send his scholars elsewhere for an illustration; let him suggest their recollections of the atmosphere of a bedroom, where several persons have slept, before the windows have been thrown open and ventilated—before, in fact, as the excellent common phrase has it, it has been *aired*—and they will have a practical sense of the difference between pure and spoiled air. It will not be hard to show them that such spoiled air, in proportion to the degree of its spoiling—that is, to the amount of carbonic acid gas with which it becomes charged—may be either called stuffy, close, oppressive, stifling, or, finally, deadly; that from being at first disagreeable it becomes, through various degrees of difficulty, impossible to breathe without suffocation and death. This will give the children a notion of the vast importance of ventilation, or the supply of fresh air, since, seeing that its neglect in the extreme is fatal, they can easily judge that the same neglect in any degree is deleterious.

Composition of fresh air.—On such a practical basis you may found further instruction as to the component parts of the air we breathe. It is hardly wise to make this teaching too definite; for instance, let them learn that air contains

about one-fifth of oxygen and four-fifths of nitrogen, with a very, very small proportion of carbonic acid; the giving them the exact fractional proportion of $\frac{3}{10000}$ really conveys no clear notion to their minds. Having shown them, however, that the proportion is very small indeed, you will give them a very good notion as to the importance of ventilation by telling them that air *after* breathing has one hundred times as much of the poisonous carbonic acid gas as it had before it was taken into the lungs.

The very name of carbonic acid gas will lead you to show that it can be evolved by all combustion of all fuel, not only such fuel as is consumed in the bodies of animals; that fires, candles, and gas lights which we burn all emit more or less of it; that the burning of a single candle produces as much as the breathing of a child. Make them recognise this by their own experiences of smoke and lamp gas of every sort, by the closeness and 'stuffiness' produced in crowded and brilliantly lighted rooms, &c., and this will lead you to another point—namely,

The possibility of ventilation.—You have shown them that as the lungs must get rid of spoiled air from the body, so, for health's sake in a low degree, for life's sake in a high degree, man must get rid of spoiled air from the rooms in which he lives. But the mere breathing out of spoiled air would not secure the being able to breathe in unspoiled air in its place, unless there were some means of taking the spoiled air away from the spot where we get rid of it. If the spoiled air remained at the level of our mouths, all the air our mouths could draw in would soon be bad. So you come to teach effectually another truth referred to in a former passage of this little book. The air we exhale, carrying away proceeds of combustion, is, like the smoke from a fire, warm air. Warm air, being lighter than cold, must rise above it, exactly in the same way as a stick thrown into a pond rises and floats on the top; and so

a means is provided whereby all the spoiled air rises above us, leaving the level of our lips and nostrils surrounded by air still unspoiled. Thus, in the open air, ventilation is not indeed unnecessary, but it effects itself by the operation of a great law of nature. But in any enclosed space all the air may become spoiled unless means be adopted for replacing the spoiled air by fresh.

The process of ventilation.—Show your class the meaning of the expression, 'Nature abhors a vacuum.' Many simple experiments will illustrate it. Let them learn that air, which they cannot see, acts exactly in the same way as water, which they can see, rushing in where possible to fill an empty space. As an illustration, let them place their hands six inches from the keyhole of the school door. Thus they will get an idea of the common sense of a draught of air. From the nature of this they will understand the principle of ventilation, and that if they can provide a means for the escape of spoiled and the entry of fresh air into a room, nature itself will effect the needful change. Of course they can exemplify this for themselves by setting door, windows, and chimney (if blocked, as they too often are) wide open in a stuffy bedroom. In practice they find all the air changed in a few minutes. The ventilation is complete. But circumstances may render this method, however effective, a very unwise one to follow.

Precautions in ventilation.—Unoccupied rooms may be thus cleared of foul air; wells and mines can be cleared in no other way than by systematic and violent movement of air currents set in motion for the very purpose; but in buildings and rooms, of whatever size, occupied by living persons, too direct and violent currents of air may cause most dangerous differences of temperature. The rational way, therefore, to ventilate occupied rooms, in which carbonic acid gas is being always gradually generated

by combustion of air in the lungs (or of any other fuel in any other furnace), should be to replace the spoiled air as gradually as it is generated.

Point out, therefore, some of the common methods of modern ventilation—the advantage of opening, for instance, both sashes of a window, so as to allow the heated air to escape above, and the fresh air to enter below; as the children will all have heard of the danger of a draught, they will readily understand that the best principle of ventilation is to admit the fresh air above the level of the occupants' heads. Before leaving the subject, you may also give them some good teaching on the subject of *draughts of air*.

A draught of air.—Make every child breathe out the contents of his lungs against the palm of his hand. They will find the air warm. Let them narrow the space through which they breathe, till they blow out the air; it will be cold. Let them narrow it still further and expel the air in a whistle; it will be colder still. Thus they will see that the same volume of air may be hot, cool, or cold, according to the speed with which it passes. From this they may judge that the opening wide of a window or door, though it may admit a large amount of air, will not be at all so dangerous as opening only a little part, through which the air will enter with greater force and strike with greater coldness. From this they will further understand that just in proportion as the heat of the chamber exceeds that of the outer air will the force of fresh air at its entry be, and in consequence that the more crowded and heated a room may be the greater is the danger which lies in ventilating with fresh air from below instead of overhead.

CHAPTER IV.

DIVISION III.—RULES FOR HEALTH; MANAGEMENT OF SICK ROOMS.

THE supply of 'rules for health' of course must be looked for elsewhere than in a manual which only offers hints on the teaching of such rules, for which we must therefore refer you to the handbooks, and pass on to give suggestions as to the teaching of sick-room management.

Sick-room management.—What has been already pointed out with regard to heat and cold will have given you a foundation to work on with your class on the first important point of this subject, the temperature of the sick room; but it is chiefly as regards good ventilation that this is to be called the first point of nursing. If a constant supply of fresh air be necessary to keep the healthy body in a healthy state, it is of even more paramount importance to secure such a supply to the body in a state of disease. Press this most forcibly on the attention of your pupils. Ask them to think of sick rooms they have been in, and of the bad air too frequent in such chambers; and, remembering what we have gone over with regard to the evolution of carbonic acid gas, lead them to see how bad ventilation in a sick room may be poisoning the patient whom we wish to cure. Suggest to them means for securing this: for instance, the covering up or screening off the patient's bed from draught for a minute or two every half-hour or hour while the whole spoiled air in the chamber

is replaced with fresh by opening door and windows; or again, the keeping up of a small fire in the grate, even though heat may not be wanted, in order to secure the movement of air; the 'heroic' remedy of beating out a pane of glass from a window not constructed to open, and so forth.

Washing of sick-room floors.—Show why this should be generally avoided as causing dangerous damp evaporations, though every means should be taken for removing dust and dirt.

Conduct of persons attending the sick.—Show that these should be scrupulously clean, cheerful in manner, doing everything quietly and regularly, without noise or hastiness, punctual in giving medicine at the right hours, prompt in removal of all offensive matters, and most particular in the immediate cleansing of all vessels made use of, &c. Point out the unwiseness of any nurse talking too much to the patient, above all on the subject of bad and distressing cases they have attended before; of arguing or losing temper with the sick; of showing that the nursing is regarded as a trouble. Some nurses think they comfort the sick by always talking of their own aches and pains. This is quite wrong; the sick person is naturally weak and selfish, and prefers being the centre of interest.

Mistakes in nursing.—It is often forgotten that no human being can long remain day and night without rest. Ask the children whether they have not heard women say, when sickness has been in their house, 'I was so many weeks without taking my clothes off.' Show that this was certainly of no benefit to the patient, and, besides its uncleanliness, was bad for the nurse. They will often hear that one woman sits up all night with another who has to nurse some one severely ill. Show the folly of this; that

one should *relieve* the other, and allow her to sleep, instead of two persons rendering themselves useless by want of rest. They will know that some nurses let any number of neighbours into the sick room, for the sake of their own gossiping, instead of keeping the sick person as quiet as possible. Show that this may deprive the patient of many short intervals of sleep on which life itself may depend; and warn them against ever breaking a sick person's sleep, even to administer medicine.

Infection.—You cannot too strongly impress the duty of preventing infection by every possible means. Teach the maxim, 'Better to be sure than sorry,' as a text for such precaution. Show that scarlatina of a very slight sort in one person might prove of the deadliest sort in another, as a reason for carefulness even when an epidemic seems of the mildest type. Make them understand further, that once an infectious illness is known to be in a house, persons can be severely fined and punished for the crime of communicating it by carelessness.

Disinfectants.—Tell the children something about the nature and use of Condy's Fluid, and press upon them the value of keeping a shilling bottle in the house.

Contagion.—Warn them especially against this. Show them that infection may be communicated by the air, in spite of all precautions, but that by avoiding contact with diseased persons they may escape a sickness; apply this to the case of playing with children who have lately had scarlatina, &c. As to small-pox there is happily so much terror of its spreading in our country that warning against its dangers is unnecessary.

Isolation of Disease.—Teach your class that, when an infectious disease breaks out, it is *every one's duty* to aid

in its isolation. This is one of many too neglected ways in which even young children can be made conscious of the importance of social politics; they will feel interested and dignified by being thought capable of really doing something for the good of their neighbours and their country.

CHAPTER V.

DIVISION III. (*continued*).—COTTAGE INCOME AND EXPENDITURE.

Work the source of wealth.—Begin this subject by a set of questions tending to prove the necessity, as a general rule, of work in order to secure existence. Very few of the children before you, of course, will have begun to earn their own living. Ask who has fed, housed, and clothed them. Show how someone at some time must have worked to do this; that this must be even the case of people who have large fortunes.

Meaning of money.—Next lead them to see the first principles of barter, and how its inconveniences naturally led to the use of money. Thus give them a clear notion that money is merely a convenient measure of the plenty or scarcity of commodities. Let them judge that a man cannot eat or drink gold, silver, or copper, but can exchange it for things he can eat or drink. Show them how a man with a bag of coin in his hand might be so poor as to die of starvation in a wilderness, and so on. Show why one metal is dearer than another, because there is less of it, and that, like corn and labour, metals and all other commodities must follow laws of demand and supply. Illustrate this by every-day instances, fluctuations in price of bread and other things, in as many ways as you can, so as to print this main point on every child's mind. Show that coin is a convenient

commodity, as it may easily be exchanged for all other commodities we want.

Expenditure and income.—Take (according to the class in life of children you are teaching, who will all be over Standard IV.) fifteen, twenty, or thirty shillings a week as the available income; let them each write down how they would apportion this, setting down the various items they will suppose necessary, and their presumable prices. This lesson may be made most interesting by reading out a few of the exercises and noting what some children have inserted and some have omitted; (also, after considerable practice, by correcting false estimates of value by the general opinions of the class). The first experiments in such lessons will be very rude, and so much the better; the teacher's main corrections must be pointing out forgotten items, and showing the difference between daily wants (bread, milk, &c.), weekly ones (tea, sugar, school pence, &c.), monthly ones (payments to sick and clothing clubs, &c.), quarterly or yearly ones (such as rent), and occasional ones, such as clothes. Remember they will have a year's time to learn this in; so give them plenty of estimates to make, and, if possible, let them have a separate copy-book for keeping them in. Let them enter what they can judge of the actual expenditure in their own homes in the way of amusements, beer, tobacco, sweetmeats, &c. Of course their entries must not be by mere guess, nor should the teacher always tell them the current price at which to place commodities. Let them inquire for themselves out of school; it will give them notions of value, and they will have a pride in discovering cheap shops and keeping down their estimates. If you accustom them to this, and commend those who find good ways of correcting their companions' estimates by cheapening the prices first assigned, and by cutting off superfluities, you may teach them a great deal of most profitable economy without their handling a shilling.

Necessity of self-denial.—The habit of making such estimates will show the children the necessity of self-denial. They will find, in nearly every case, that the daily and weekly expenditure they set down will prove, when the more occasional necessary charges are added, to exceed the annual income. Show them that, to avoid the danger and pressure of debt, the estimates must be reduced, or the income must be increased. The former alternative reduction of estimate you will teach them to treat first, in a set of lessons showing what are necessaries, and what superfluities, which may be struck out; the latter, means of adding to income, you can make the subject of a set of subsequent lessons.

Necessaries and luxuries.—You will find various items in the estimates made which will suggest much teaching. Tobacco, for instance, you can only teach to be a luxury. Beer, on the other hand, you will find it wisest, whatever your own opinion on the subject, to let them regard as a food. This will not prevent you teaching much as to its uselessness, its enormous cost, its evil effects, and its comparative worthlessness as food, showing how much sound nourishment, good clothing, and additional comfort might be obtained for money misspent in drink. You will find them soon reducing the beer money in their imaginary estimates. They will learn to transfer many other items from the necessary to the luxurious lists, and thus draw nearer to balancing expenditure with income.

Reserve fund.—But allow no estimate to pass your judgment as a good one that does not contrive somehow to secure a reserve fund for unexpected contingencies. Show them the disadvantage of housekeepers never having a shilling to spare—that the least mishap may put them in debt; and always insist on an item of *reserve*. The use of such a sum they will understand better when you come to teach them the duties and rules of providence as well as of thrift.

Expenditure must balance income.—Suppose the income, excluding *all* luxuries, prove insufficient for the estimate made, you must teach them to modify the necessaries charged. Perhaps, for instance, they may have allowed too much for meat, when as much nourishment can easily be got from cheaper things. Showing this will teach them how to economise in the cost of eating. The same may be shown with regard to the use of fuel. If their calculation prove too high for the wages to pay, they must contrive a cheaper and better system of warming; if they have allowed too much for Sunday clothes, they must content themselves with cheaper materials, and so on. But show that they must bring down the estimate to the income, or debt and ruin ensue.

Means of increasing income.—Show how everybody thinks he would be quite happy if he had a little more income than now, and, according as your scholars are in town or country, indicate means of increasing income. Show that daily wage is a market matter, which neither employer nor employed can fix just as he likes; but that profit from extra work or piece work depends on what men will do for themselves. For country children show the increase of income, or saving of expense, amounting to the same thing, which can arise from gardening, pig-keeping, bee-keeping, rabbit-feeding, &c.

How money makes money.—Show that once a man has more money than he needs to spend he is a capitalist, and can get *advantages* with his money. *You cannot enforce this truth too strongly.* Bees, pigs, rabbits, gardening requisites, cannot be got without money; therefore show the necessity of saving, which will bring us on to the subject of *providence.* Dwell most especially on the advantage of a reserve fund as cheapening everything. Let this come out from showing that the poor always have to pay most for what they buy, first because they buy in such small

quantities, and secondly because they do not always pay with ready money; and let them see that a reserve fund of a pound or two would set them free from these great disadvantages. Din this well into their minds, and give them frequent calculations to make of the money to be saved by buying in larger quantities and for ready money. Show how this can be done still better by several joining together part of their reserve funds to lay in cheap stores for ready money, and you will have taught them the grammar and common sense of co-operation.

CHAPTER VI.

DIVISION III. (*continued*).—SAVINGS.[1]

Difference between thrift and providence.—In the last chapter, showing how to teach the art of increasing our comfort of life, either by earning more or by making our earnings go further, we have been studying thrift, or the way to thrive and prosper. A thrifty man may make his earnings keep him in a great deal of comfort so long as he is able to earn. But just such a man will have forethought enough to know that, if he live long enough, his powers of earning must diminish; that there will be times when he will want money and cannot earn it; so, if he be wise, he will go beyond being *thrifty*, he will become *provident*—that is, he will provide for times of need out of his earnings in time of abundance; in other words, he will lay by money.

Duty of providence.—Show your class that every man's *duty* is to make provision against want in sickness and old age, by making it clear to them that if all neglected this duty all would starve. Show next why so many people make no provision, namely, because the Poor Law is in existence to keep them alive when destitute. Let them see the folly of trusting to the poor-rates, by showing that people

[1] Use for class teaching, in this as well as other branches of Domestic Economy, Bartley's *Domestic Economy; Thrift in Every-day Life*; and, as a reading book in your upper standards, *The Thrift and Providence Reading Book*, by the Rev. W. Lewery Blackley, M.A.

on the parish are never happy or contented; that they never have enough to keep them comfortably, and that they get nothing but the very smallest help necessary to keep them alive.

Burial by the parish.—They will all be ready to think it a great disgrace and pity to have to be buried by the parish. Show that the disgrace is far more likely to be felt by a live person in being kept alive by the parish than by a dead person in being buried by it, and so forth.

The literal meaning of 'providence' is looking forward.—Set the class to do this by making each one write down on a slate what he thinks he shall live on when unable to earn money. Whatever answer you receive must come under one or other of these two heads, *independence* or *dependence*. For a man unable to work, unless he have a provision made to keep him, must depend for his living on other people.

True meaning of 'independence.'—Some folk think *independence* means much the same thing as insolence and bad manners. Show this to be a mistake. If a man living on parish pay swear at the relieving officer and abuse the guardians and insult the ratepayers, he is *dependent* all the same on what they give him for a livelihood; while a civil, well-mannered labourer, who has a good provision made by himself against want in sickness and age, does not depend upon the poor rates at all, and is *independent* in the right and happy sense of the word.

Independence better than dependence.—Take great trouble in making the children able to explain this fact. Show how the *independent* man can have in time of need as much as he likes to provide, while the *dependent* man can only have the very least other people choose to give him.

Sponging and beggary.—Show them that there are two kinds of dependence—depending on friends, or sponging, and depending on strangers, or beggary; and try to make them understand the baseness of both.

Possibility of provision.—It is quite possible that many of your pupils, children of classes quite ready to receive parish aid—some of them, moreover, actually having their school fees paid from the rates—will have been taught at home that a proper provision against need in sickness and old age is impossible for working men to make. Put this notion entirely out of their minds. They will see that some men can, if some can not, make provision which will do away with the allegation of universal impossibility. Next try to show them that many who are now too old to provide might have done so when they were younger had they chosen. And on this fact, which you can exemplify by many illustrations, base your constant enforcement of the duty and wisdom of beginning early, even as children, the habit of thrift and providence.

Penny banks.—If there be no penny bank in the school you are engaged in, do your strenuous best to get one established. Any two respectable persons who will devote one quarter of an hour each week to carrying it on will be giving to their neighbours a vast benefit, besides putting before the scholars' eyes a weekly lesson of practical providence.

Get the children to make either occasional or regular deposits, taking care to make them understand the meaning of such terms as *deposit*, *investment*, *trusteeship*, *security*, and *interest*; and fill them with ambition to save up, even from the very earliest, a reserve fund which may help them in every way as they grow older.

Importance of saving to the young.—Make them

understand that all young people, when unmarried and earning wages beyond what they truly need to spend day by day, are *capitalists*, by the surplus of their earnings above their necessities; that youth is the only time in which they can with certainty become capitalists; and that they must be careful to *invest* such capital for the future, instead of wasting it in the present.

Insurance against want in sickness and old age.—Even children will understand that a little laid by every week will not eventually keep a man through many months of sickness, when unable to earn wages. So give them abundance of definite teaching on the great subject of insurance. Having shown them its principles, give them plenty of exercise and calculation on the subject in their arithmetic lessons. These lessons should familiarise them with the meaning of such terms as *average sickness and mortality*, *expectation of life*, *investment of capital*, *proportion of management expenses to income*, and so forth. Such practical arithmetic is far more useful to ninety-nine out of a hundred children than calculations they will never need in angular measure, or in wool and troy weights.

Friendly societies.—You will thus make your children familiar with the outlines of the friendly society system, as a sick and pension fund, or benefit club; and probably teach them enough to make them quite willing and anxious to join some such society as soon as they begin to earn wages.

How to select a friendly society.—It is one thing to make your scholars willing to join a society, and another to teach them how to know safe ones from unsafe. For, unhappily, a vast majority of our so-called friendly societies are unsafe, being based on wrong principles. We can only here point out some conditions which you must

show your pupils to be indispensable to the offering of proper security by any benefit club. It must provide for pension in old age as well as for a weekly payment in sickness, or the member will be only a pauper in old age; it must have not only a government certificate that the rules are according to law, but also *an actuary's* certificate that the contributions are sufficient to secure the benefits promised; it should have a distinct rate of payment at entry for each year (or perhaps three years) of age, so as to secure the young member from having to pay more than his share for the advantage of old members; it should not hold its meetings at a public-house; it should not mix its sick fund with any trade fund, lest the provision for sickness should be lost in supporting a strike for wages; and it should keep its sick fund membership quite apart from any *trade* organisation, which might allow a man to be expelled and lose his sick pay and pension, if he dissented from the doings of his trade committee.

The safest and easiest form of insurance.—This is that of payment in advance. Teach your classes that this secures better than any other form, and at a cheaper rate. A monthly or quarterly payment may be easy in good times, and become impossible in bad times, so that a man may lose the provision altogether to which he has been contributing for years. And, again, if he has made his insurance by one payment, in youth, when his earnings were good and his outgoings small, he will not have to pinch himself or his wife and family all through the rest of his lifetime, in order to 'keep up his club.'

Other means of provision.—Teach your class that money makes money; and urge them to put the statement to the test of practice, even in their young days. The boy or girl who lays up a pound is learning far more than a pound's worth in the habit of self-denial and thrift he or she is forming. We have pointed to the penny bank as the

first beginning; it will save many a shilling from useless lollipops and sweets, to buy good, sound, useful clothing, or sensible toys, or garden tools, or beehives, or even a watch. And when young folks have once got the habit of laying by, and are capitalists, they will have to consider how to invest their money. Therefore give your upper standards plenty of clear information about Government annuities, pensions, and Post Office insurance. They will understand of themselves, if they insure in a good club, that they must keep up membership of a provident dispensary, or, in other words, 'pay in for the doctor,' or else they will get no certificate to entitle them to sick pay.

But, when all these things are done, the truly thrifty and provident man will generally have some money to spare. Therefore teach the meaning and method of building societies, whereby working people can, with a small payment to begin with, buy a bit of ground, and on the security of the ground borrow enough money to build a house, which, after paying off a certain part of the borrowed money each year for a time, they can either sell, or live in, rent free, and have still, when they die, to leave to their children. So from the first beginning of a little child's halfpence placed in the penny bank, to the making of an old man's will and leaving of comfort to his family, you can bring your classes to a knowledge of the history and possibility of independence, while keeping before them, in its true light, the injustice, dishonesty, shame, degradation, and real misery, caused by waste, self-indulgence, thriftlessness, and improvidence, which keep men poor and discontented through life, and make them die as wretched, half-starved lonely paupers at the last.

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